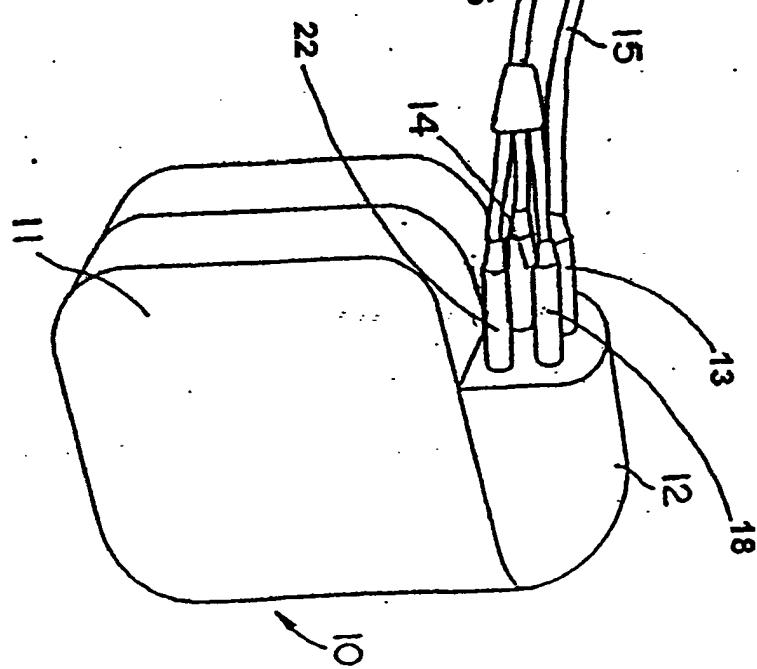


FIG. 1



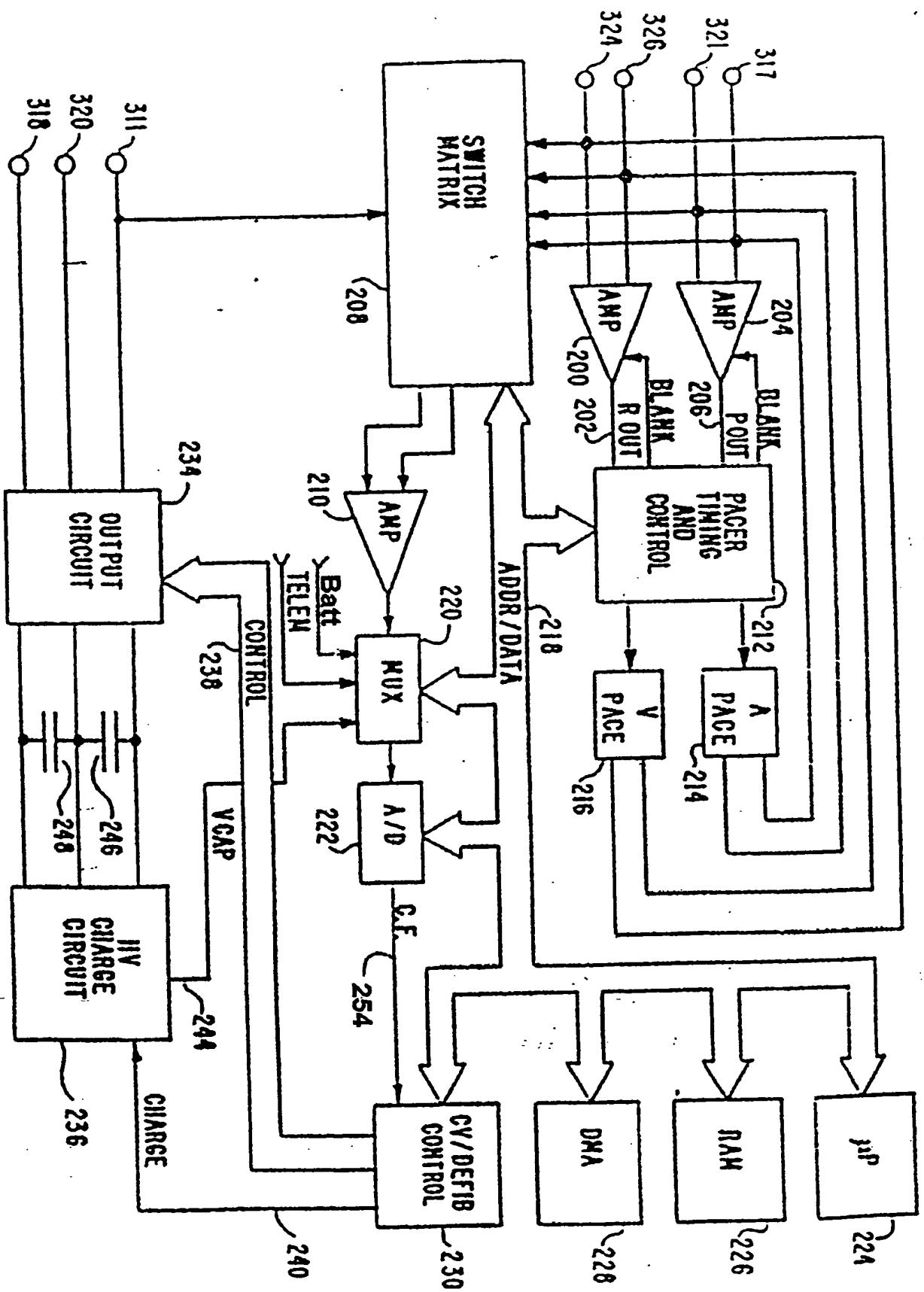


FIG. 2

FIG. 3A

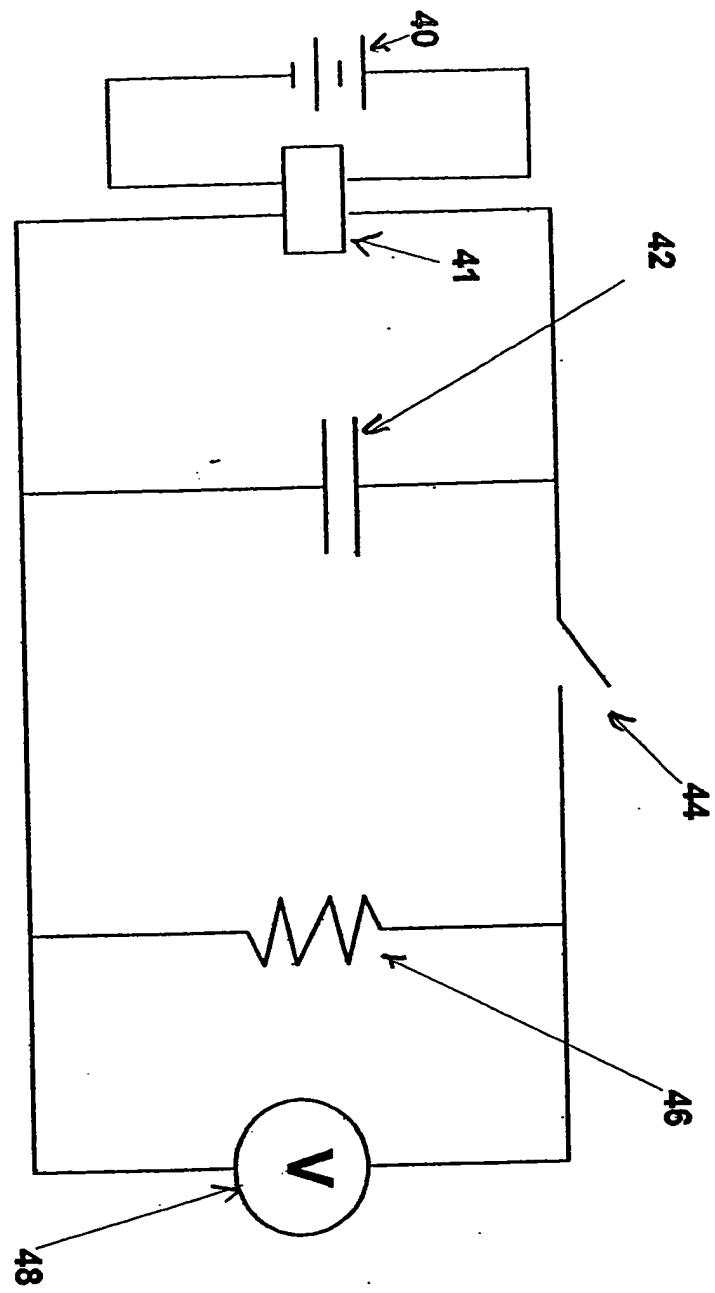


FIG. 3B

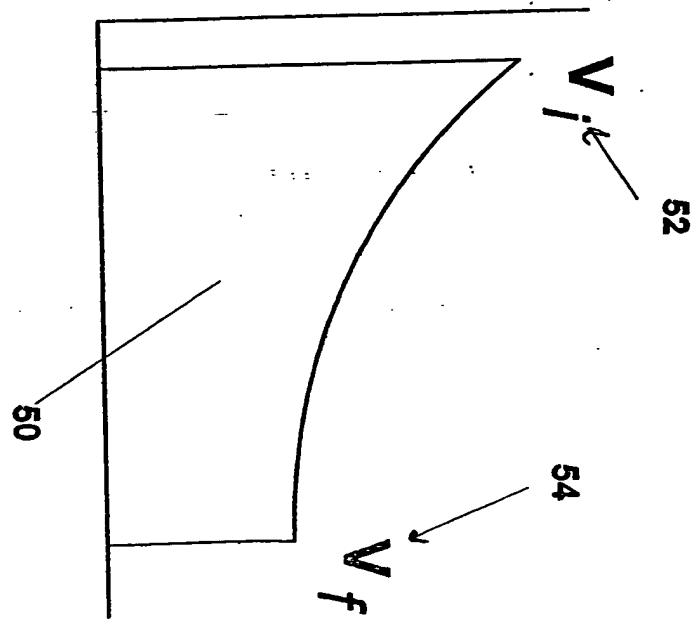


FIG. 4

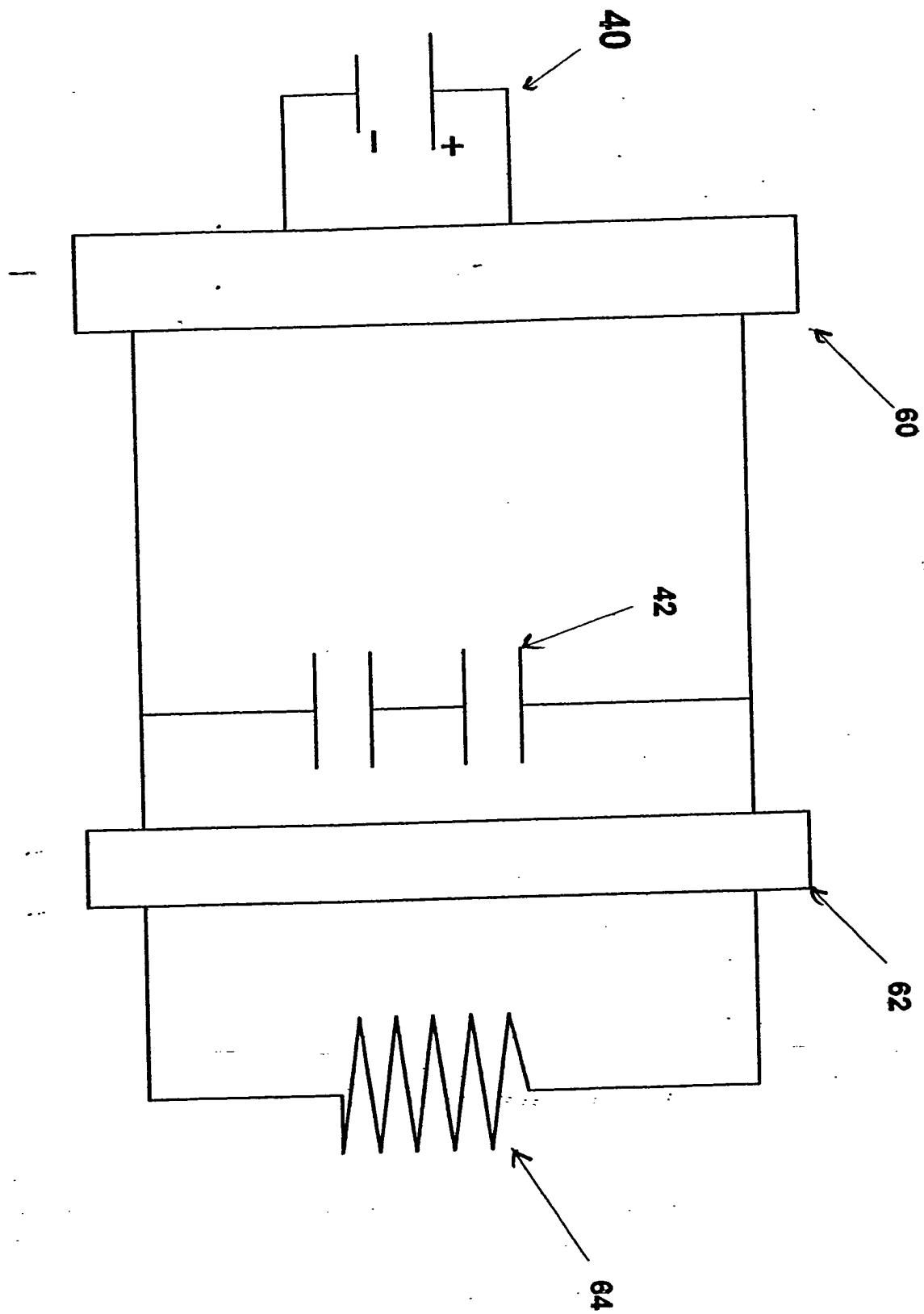


FIG. 5

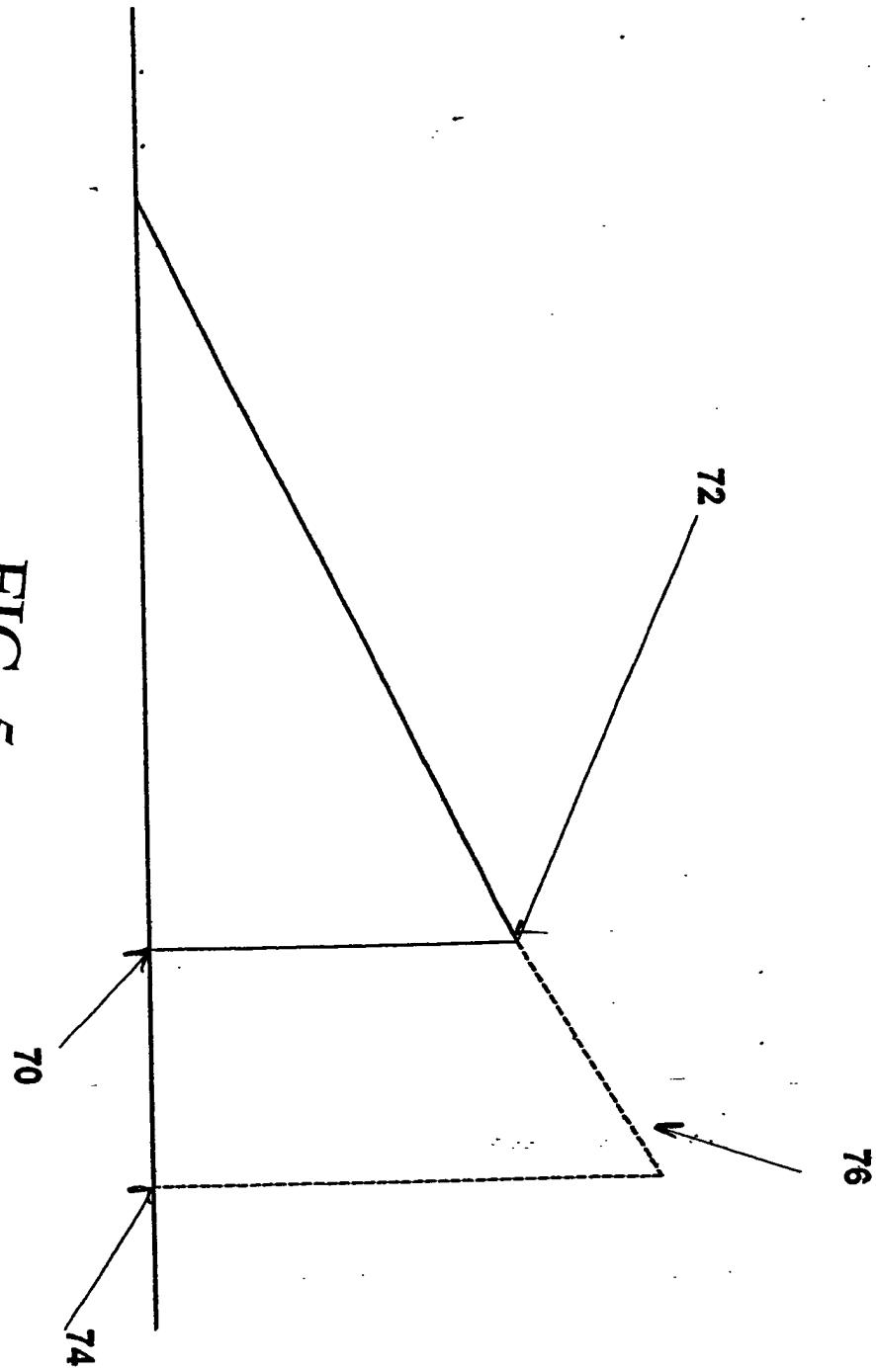
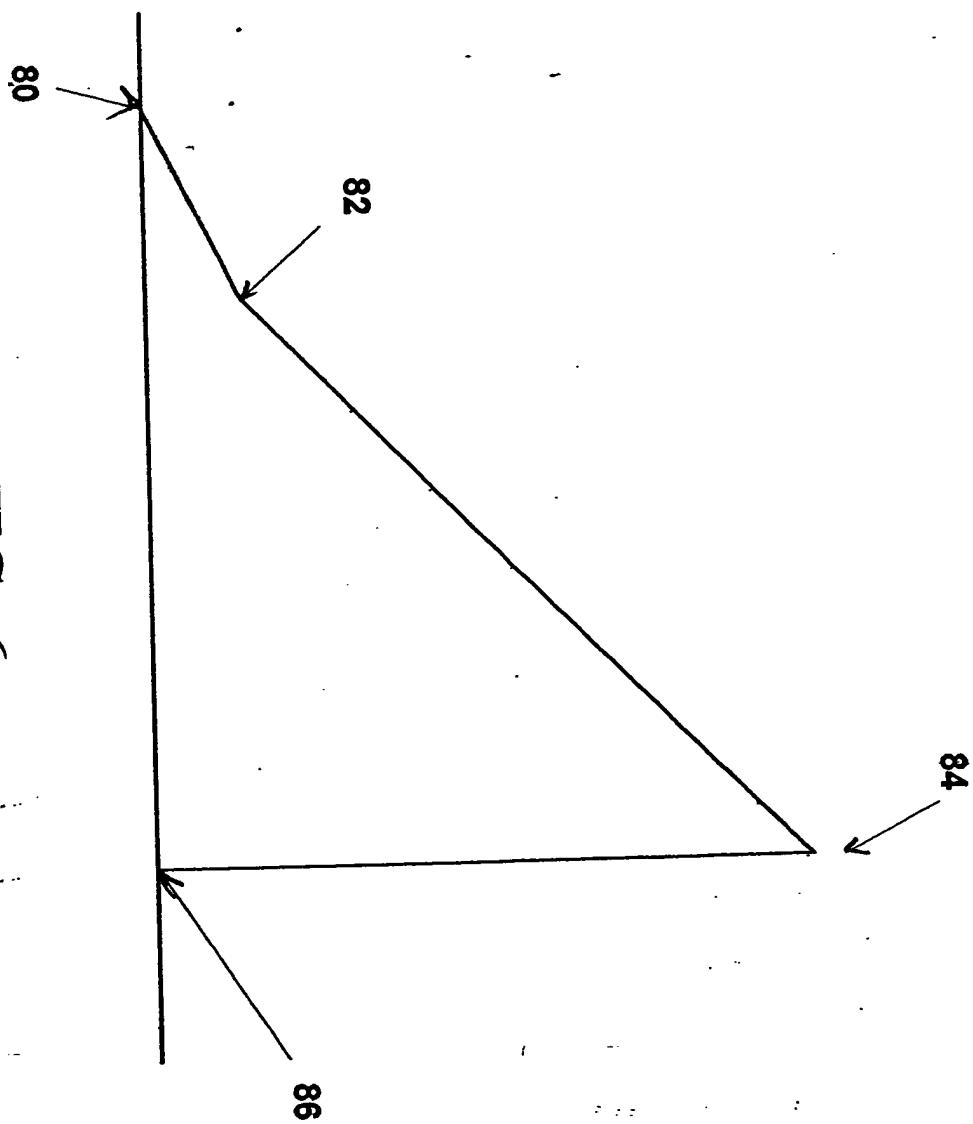
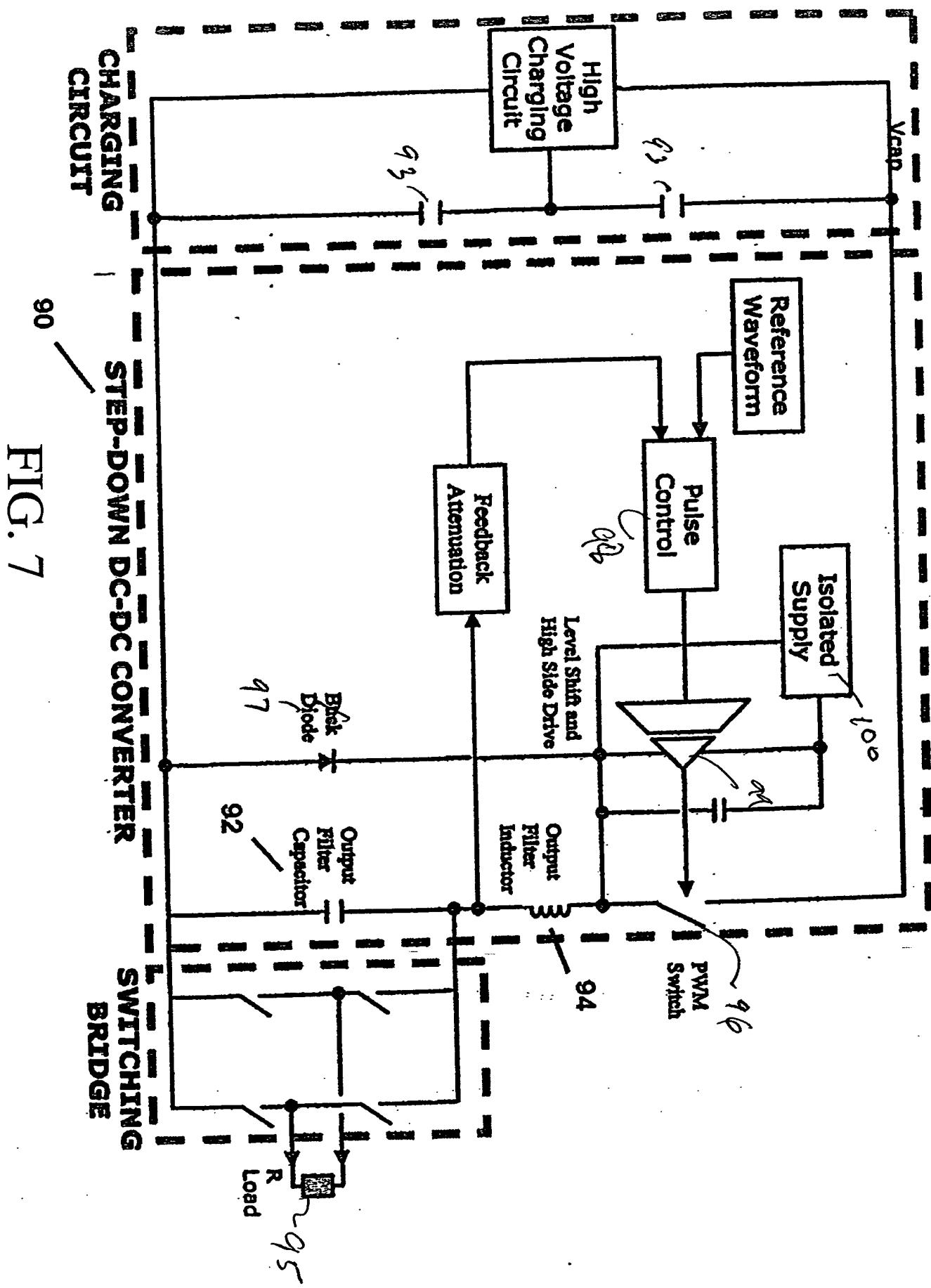


FIG. 6





90

FIG. 7

**Example 1 (Single Toroid, Magnetics Core Selector Chart Method L = 14  $\mu$ H)**

$L^2 = 12$  from selector chart choose 58350-A2  
58350-A2 perm. 125 $\mu$   $A_L = 105$   $l = 5.88$  cm

$$N = 1000 * (0.014/105)^{0.6} = 11.5$$

$H = (0.4 * \pi * 11.5 * 40) / 5.88 = 99$  (design manual table: ~33% perm. At  $|P|$ )  
So inductance falls to  $0.33 * 14 \mu$ H = 4.6  $\mu$ H at 40 Amps

**Volume = 5.2 cc** (diameter = 24.6 mm, length = 10.9 mm)

**Example 2 (Single Toroid, L = 14  $\mu$ H)**

58043-A2 perm. 14 $\mu$   $A_L = 7$   $l = 2.38$  cm

$$N = 1000 * (0.014/7)^{0.6} = 44.7$$

$H = (0.4 * \pi * 44.7 * 40) / 2.38 = 944$  (design manual table: ~71% perm at  $|P|$ )  
So inductance falls to  $0.71 * 14 \mu$ H = 9.9  $\mu$ H at 40 Amps

**Volume = 0.59 cc** (diameter = 24.6 mm, length = 5.96 mm)

**Example 3 (2 stacked toroids, L = 14  $\mu$ H)**

58273-A2 perm. 14 $\mu$   $A_L = 12$   $l = 1.363$

$$N = 1000 * [0.014 / (2 * 12)]^{0.6} = 24$$

$H = (0.4 * \pi * 24 * 30) / 1.363 = 884$  (design manual table: ~72% perm. at  $|P|$ )  
So inductance falls to  $0.72 * 14 \mu$ H = 10.0  $\mu$ H at 40 Amps

**Volume = 0.53 cc** (diameter = 7.6 mm, length = 11.7 mm)

**FIG. 8**

Tek Run: 10.0MS/s Sample 

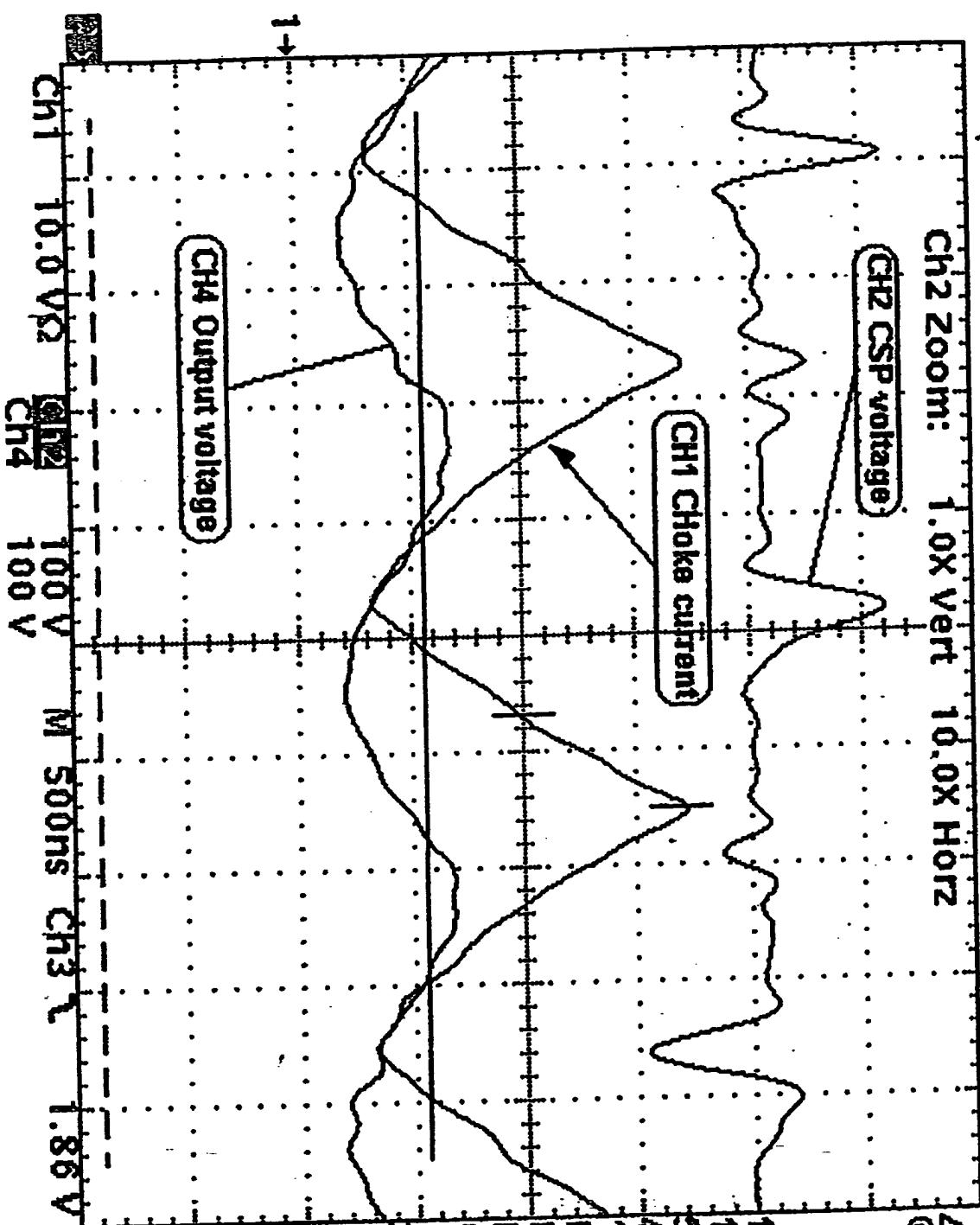
Ch2 Zoom: 1.0x Vert 10.0x Horz

△: 2.8 V  
@: 288 V

CH2 CSP voltage

CH1 Choke current

CH4 Output voltage



C1 Pk-Pk  
37.6 V  
15 ohm load,  
1022 V CSP,  
500kHz PWM,  
40N140 PWM sw,  
13.7 uH 58273x2,  
R104gate=5 ohm,  
R9=100K,  
R10=2M-470pFd,  
C11=0.1 uFd,  
No Snubber,  
249 ohm Opto Imp

FIG. 9

Tek Run: 5.00ms/s Sample Width 1

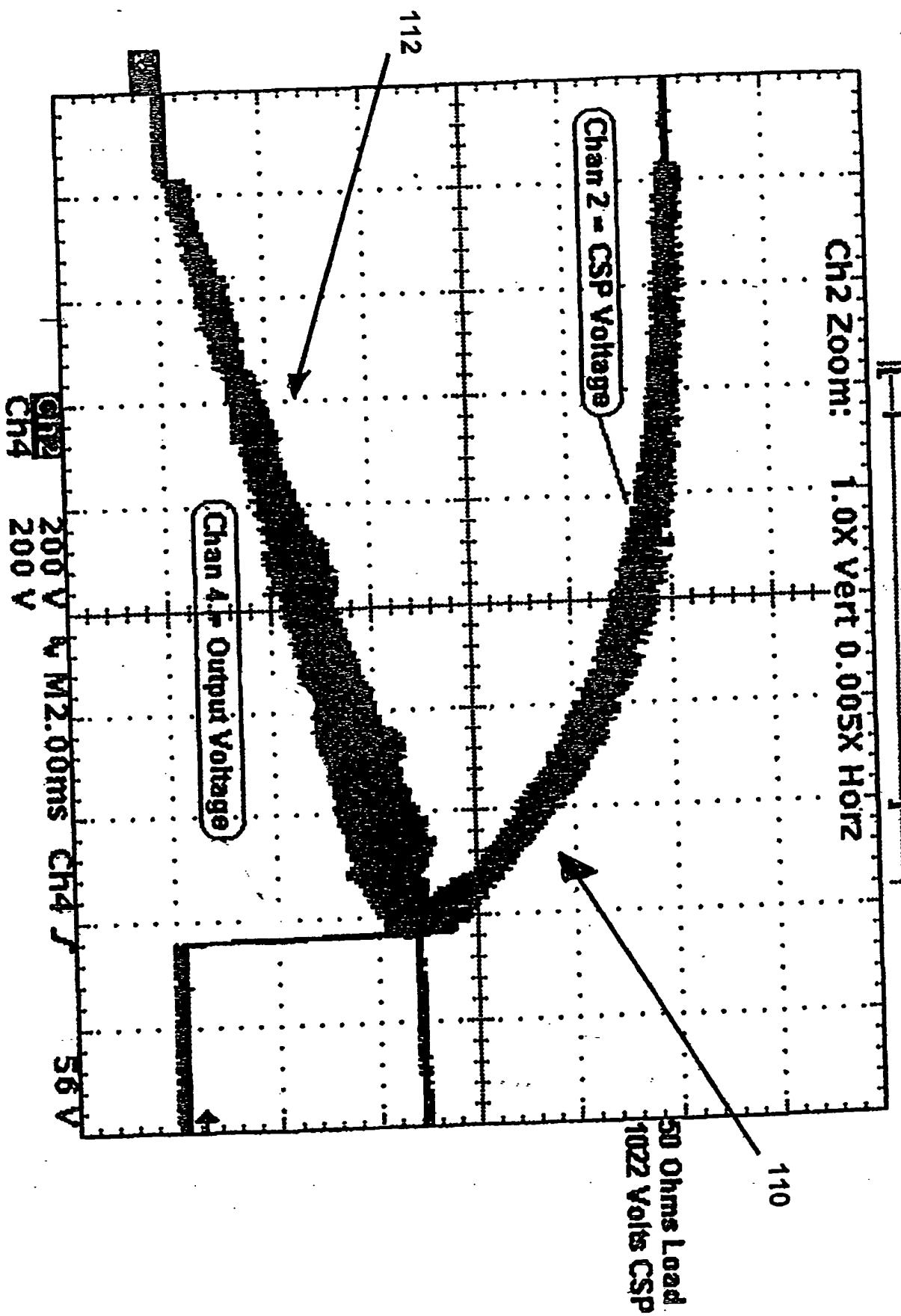


Figure 10

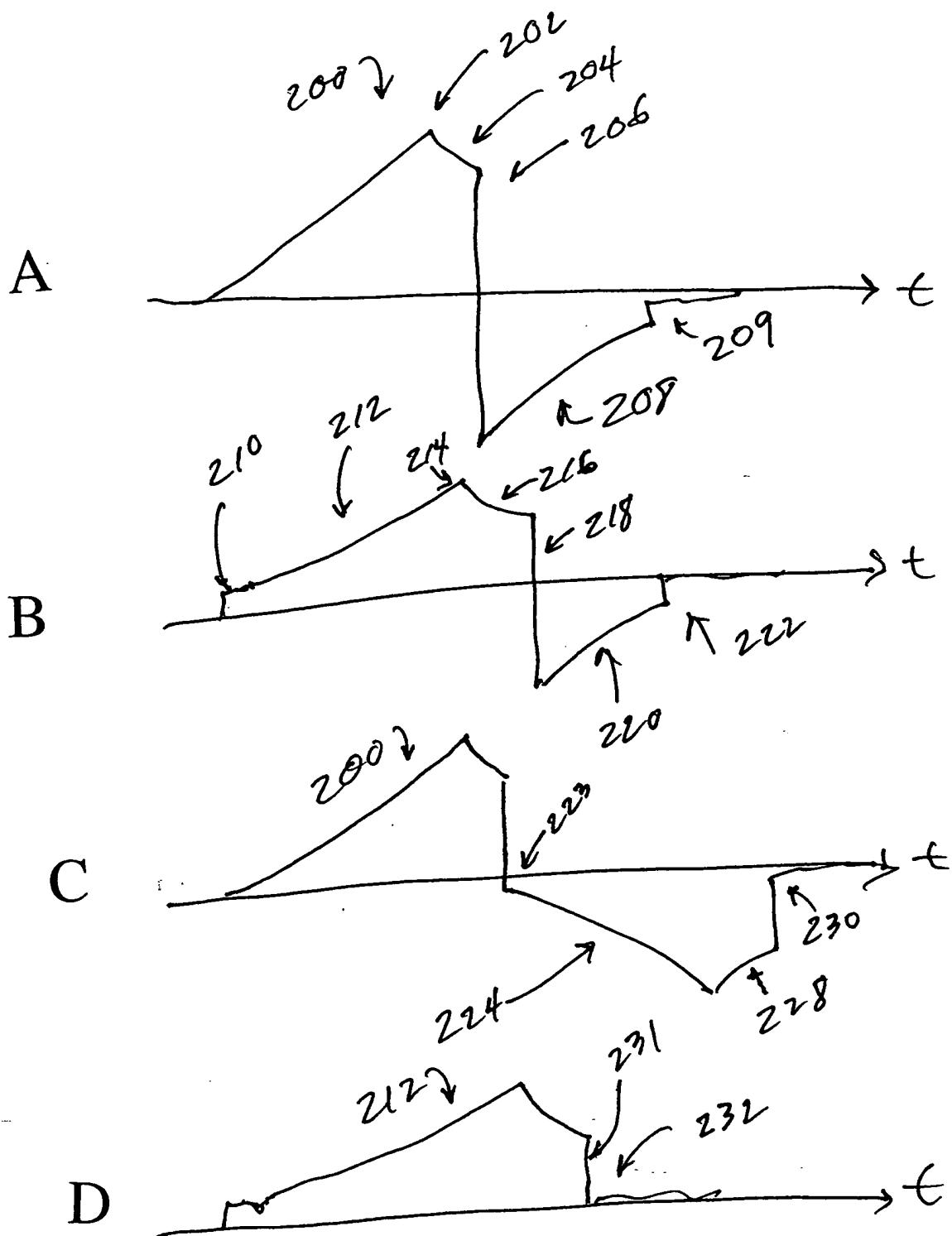


FIG. 11